Jurisdictional Delineation

Petaluma Trestle Rehabilitation Project
PETALUMA, SONOMA COUNTY, CALIFORNIA

Prepared For:

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1.0 INTRODUCTION

1.1 Delineation Study Background

The Petaluma Trestle Rehabilitation Project will rehabilitate a dilapidated wooden railroad trestle that was constructed in the early 1900's. The trestle, once rehabilitated, is expected to be open to pedestrian and bicycle access. The trestle is located in Petaluma, CA and is on the Petaluma River in an area known as the "turning basin" (Figure 1). The trestle is located on the southern bank of the turning basin, and an existing floating dock for public access presently runs adjacent to the entire length of the trestle. The jurisdictional delineation study area includes the southern bank of the turning basin, which is the location of the trestle and the existing floating dock, and the northern and eastern bank along which the existing floating dock could be relocated temporarily during trestle rehabilitation work.

The Petaluma River is subject to tidal influence at the location of the trestle and has a daily semi-diurnal tidal regime consisting of two high tides (one high and one higher) and two low tides (one low and one lower). The regular pattern of inundation and exposure supports emergent wetlands vegetation in the higher intertidal zone and mudflat habitat in the lower intertidal zone, and the daily and annual fluctuations in tide elevations determines the elevation limits of both communities. The tidal regularity, however, means that these communities are not subject to the variability of seasonal and climatic weather patterns that non-tidal wetlands experience in California's Mediterranean climate, and this allows the elevation limits of the habitats remain relatively fixed based on tidal influence. It also means that the typical "three parameter approach" routine level investigation used in delineating non-tidal wetlands is not required, and the jurisdictional wetlands boundary is delineated by the height and frequency of the tides.

California state and federal regulatory agencies have jurisdiction over activities that are proposed to be conducted in and adjacent to tidal areas. Because the various agencies are charged with regulation for different causes, their limits of jurisdiction are generally defined separately, such as by a tidal height or a topographic feature, and jurisdictions are generally overlapping. This delineation report identifies the various regulatory agencies that have jurisdiction over the area in which activities will be conducted for the trestle rehabilitation project and provides the location and extent of their respective jurisdictional limits.

1.2 Regulatory Background

There are three federal and state agencies that have regulatory jurisdiction within the area of the trestle rehabilitation project. They are:

U.S. Army Corps of Engineers (Section 404 of Clean Water Act and Section 10 of Rivers and Harbors Act): In tidal areas, Section 404 jurisdiction extends up to the high tide line (HTL). Vegetated tidal areas are wetlands while non-vegetated areas are treated as other waters of the U.S. for purposes of Section 404. If materials that are considered fill, such as soil, rock, and piles, are placed within Section 404 jurisdiction, a permit from the Corps of Engineers may be required.

Section 10 jurisdiction is at the plane of mean high water (MHW) and lower. Any fill or structure that is placed in, under, or over Section 10 jurisdictional areas may require a permit from the Corps of Engineers.

Regional Water Quality Control Board (Section 401 of Clean Water Act and Porter-Cologne Act): In general, any activity requiring a Section 404 permit from the Corps of Engineers will require a

Section 401 water quality certification from Regional Water Quality Control Board (RWQCB) which certifies that the 404 permitted activity will be conducted in a manner that meets state water quality standards. Therefore, Section 401 jurisdiction effectively includes all section 404 jurisdictional area claimed by the Corps of Engineers. However, in practice, RWQCB jurisdiction extends to the top of bank as waters of the state under the Porter-Cologne Act. All other waters not within 404 jurisdiction, such as isolated wetlands not claimed by the Corps of Engineers, are waters of the state and are claimed by RWQCB under Porter-Cologne.

California Department of Fish and Game (1602 Fish and Game Code): California Department of Fish and Game (CDFG) regulates streams, rivers, and lakes for the benefit of fish and wildlife. Jurisdiction generally includes the bed and banks of streams, rivers, and lakes, and extends to the top of bank in areas with no riparian vegetation or to the edge of the outer dripline of riparian vegetation if it is present. For this project, CDFG jurisdiction is the Petaluma River, extending to top of bank.

2.0 METHODS

Determining regulatory agency jurisdiction in tidal areas is dependent on determining the location of corresponding tidal elevations with in the Study Area. Tidal elevations can be determined by recording a series of diurnal tide events and calculating averages or means. Such tidal data is recorded by National Oceanic and Atmospheric Administration (NOAA) and averaged over a 19 year period, called an epoch. The resulting tidal elevations are published for various locations, or active stations, by NOAA. Often a tidal data active station is located near a point of interest for which tidal elevation data is needed. For points of interest far distant from the active station there often needs to be an adjustment in tidal heights because bathymetry of the tidal basin or tidal sloughs and other factors will change the amplitude of tidal waves. However, the difference in tidal height for distant locations in reference to the active station are also known and published by NOAA and other sources. Therefore, tidal height elevations can be calculated for locations away from an active station by using a correction factor. In the case of this trestle rehabilitation project, the nearest active station is San Francisco (Station No. 9414290) (NOAA), which is near the Golden Gate Bridge, and the nearest location with a known correction factor is the “Upper drawbridge” on the Petaluma River (Pacific Publishers 2010). The Upper drawbridge is the drawbridge located downstream of the trestle project and adjacent to the Highway 101 bridge.

Based on the methods of calculating tidal heights described above, the various tidal heights reported by NOAA for the San Francisco Station were calculated for the Upper drawbridge using the known published tidal correction factor (Pacific Publishers 2010). The resulting calculated tidal heights were determined to be sufficiently accurate for the project area because the trestle project is a relatively short distance from the Upper drawbridge. In addition to calculating the tidal heights based on recorded tidal data, some tidal height data can be confirmed by inspecting a site and observing where tidal marsh ecology indicates the tidal heights should be. In the case of high tide line (HTL), for example, the elevation of the upper limit of the tidal marsh plant community should approximately correspond to the calculated high tide line. Other indicators of high tide line also include presence of wrack lines and water marks observable on piles, retaining walls, culverts, or other structures. The high tide line within the Study Area for the trestle project was mapped in the field along the upper tidal marsh plant community limit using a GPS unit with sub-meter accuracy.

Other tidal heights, such as mean high water (MHW) or mean lower low water (MLLW), are not as easily determined in the field as the high tide line using ecological or physical indicators, and

therefore were not mapped using GPS. Elevations of these tidal heights were determined from published tidal data based on tidal measurements recorded over many years.

Determination of the top of bank, the jurisdictional limit of RWQCB and CDFG, was determined in the field using GPS. In general, the top of bank was considered to be the point at which the bank leading up to a grade change to relatively level occurred or at the top and outboard edge of a vertical retaining wall. Top of bank plant communities are often non-wetlands but may have deep rooted plants, such as riparian trees and bushes, that reach deep into the soil profile for moisture.

This study also evaluated whether or not any non-tidal jurisdictional wetlands were present within the Study Area using the Corps of Engineers wetland delineation methodology. This methodology is often referred to as the "three parameter approach" and requires that hydric soil, wetland classified plants, and wetland hydrology be present for an area to be considered a wetland. The Study Area was surveyed for the presence of any of these non-tidal wetland indicators and none were found.

3.0 RESULTS

Tidal heights were calculated for the area within the Study Area based on published tidal data at the San Francisco active station and applying correction factor at the nearest station near the Study Area (the Upper drawbridge, Petaluma River). The correction factor on a high tide between San Francisco and the Upper drawbridge is +0.70 feet.

Based on NAD 88 (where the NAD 88 datum is set at 0 feet at San Francisco), the tidal elevations at the Upper drawbridge, which are considered accurate for the Study Area because of proximity, are:

HTL (high tide line) = 8.03 ft

MHHW (mean higher high water) = 6.60 ft

MHW (mean high water) = 5.99 ft

MTL (mean tide level) = 3.94 ft

MSL (mean sea level) = 3.88 ft

MLW (mean low water)= 1.89 ft

MLLW (mean lower low water) = 0.76 ft

The results of mapping the HTL and top of bank are shown in Figure 2.

WRA made field visits on August 2 and on August 23, 2011 for the purpose of mapping the HTL and top of bank within the Study Area. The upper limit of tidal marsh vegetation was used as the HTL indicator, consisting of plants species such as marsh gumplant (*Grindelia stricta*), fat hen (*Atriplex triangularis*), and salt marsh bulrush (*Bolboschoenus maritimus*). Vegetation observed at top of bank was generally non-wetland forbs and grasses, such as wild oat (*Avena barbata*), fennel (*Foeniculum vulgare*), and cheeseweed (*Malva parviflora*). Some top of bank areas were

landscaped with ornamental plants, including ground covers, such as deer grass (*Muhlenbergia rigens*) and English ivy (*Hedera helix*), and trees, such as coast redwood (*Sequoia sempervirens*) and silk tassel (*Garrya eliptica*).

The Study Area has one soil type which is Yolo clay loam, 0 to 2 percent slopes.

Delineation of jurisdictional areas ultimately is the responsibility of the agencies that claim jurisdiction. The respective agencies often will verify in the field a delineation prepared by others before making a final jurisdictional determination. Therefore, until the agencies have made a final determination, all jurisdictional areas determined in this study are considered to be potential jurisdictional areas.

3.1 Potential Corps of Engineers Jurisdiction

Section 404 (Clean Water Act) - Section 404 jurisdiction includes all open water area of the turning basin and adjacent shorelines to the upper limit of tidal marsh vegetation. Where vertical walls are located, 404 jurisdiction would be up to the HTL elevation. The line showing the upper limit of potential section 404 jurisdiction is in Figure 2, and occurs at approximately 8.03 feet (NAD88).

Section 10 (Rivers and Harbors Act) - Jurisdiction for section 10 includes all navigable areas up to the plane of MHW which has been calculated to be 5.99 feet (NAD88). The difference in elevation between HTL and MHW is 2.04 feet. Therefore, MHW would be approximately 2-feet lower in elevation than the HTL shown in Figure 2.

No areas were found that met the three parameters for non-tidal wetlands during the delineation site visit. Therefore, the only potential jurisdictional wetlands were the tidal marsh communities up to the HTL.

3.2 Potential RWQCB Jurisdiction

The RWQCB has jurisdiction over waters of the state of California, and includes the area up to top of bank. If a stream or river is involved, jurisdiction is from top of bank across to top of bank on the opposite shore. Top of bank is a topographic feature that may change elevation and, therefore, is not constant at any one elevation. Potential jurisdiction of RWQCB is shown in Figure 2.

3.3 Potential CDFG Jurisdiction

CDFG jurisdiction is similar to the area described above for RWQCB and is the area from top of bank to top of bank. Because none of the trees in the Study Area were considered to be naturally occurring riparian trees or are dependent on the Petaluma River, the limit of CDFG is the top of bank as shown in Figure 2, and not the outer dripline of trees.

4.0 REFERENCES

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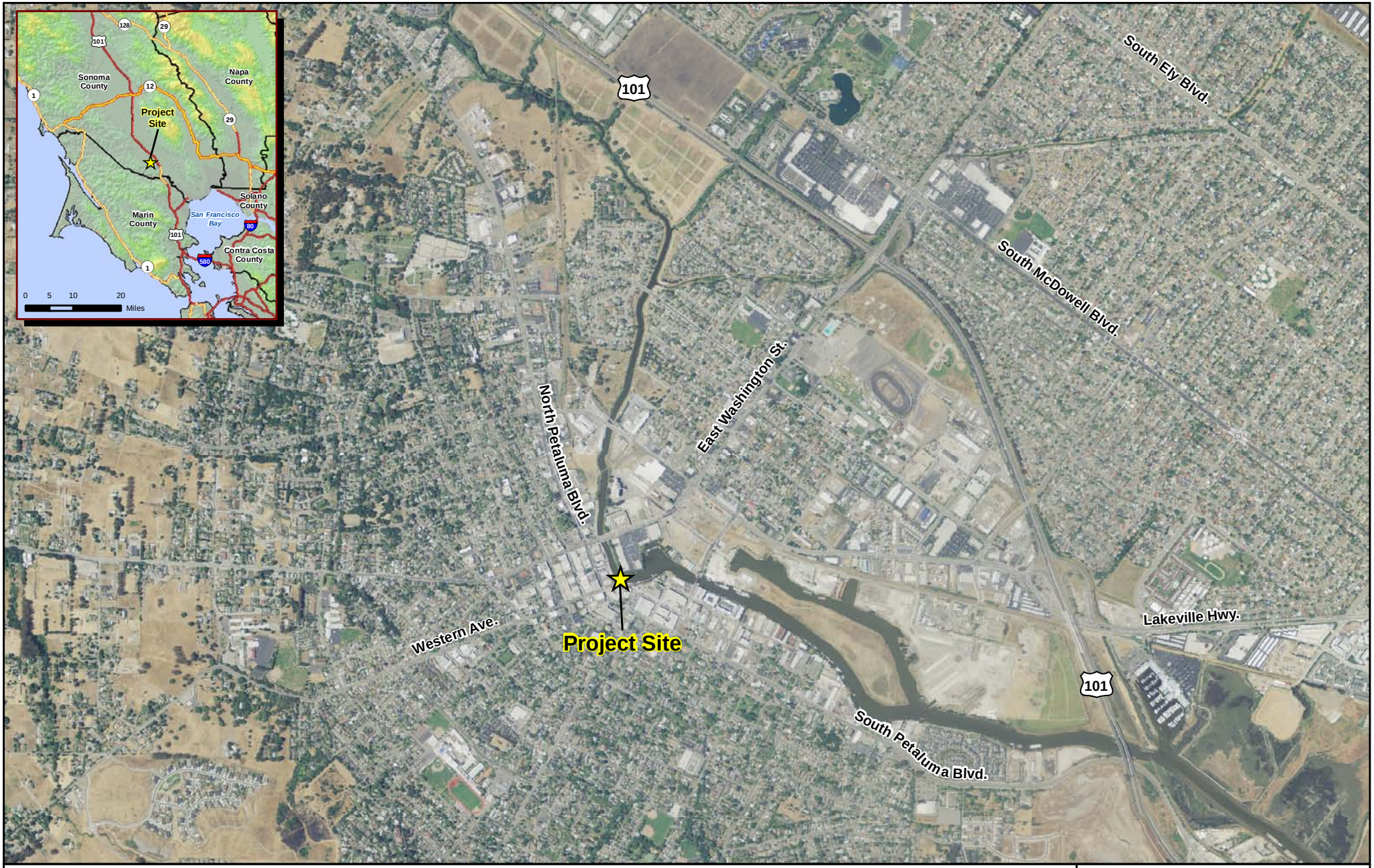

Figure 1. Location Map

N
W E
S

0 1,000 2,000 4,000
Feet

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Petaluma Trestle Rehabilitation Project
Sonoma County, California

Date: August 2011
Aerial: 2009 NAIP
Map By: Michael Rochelle

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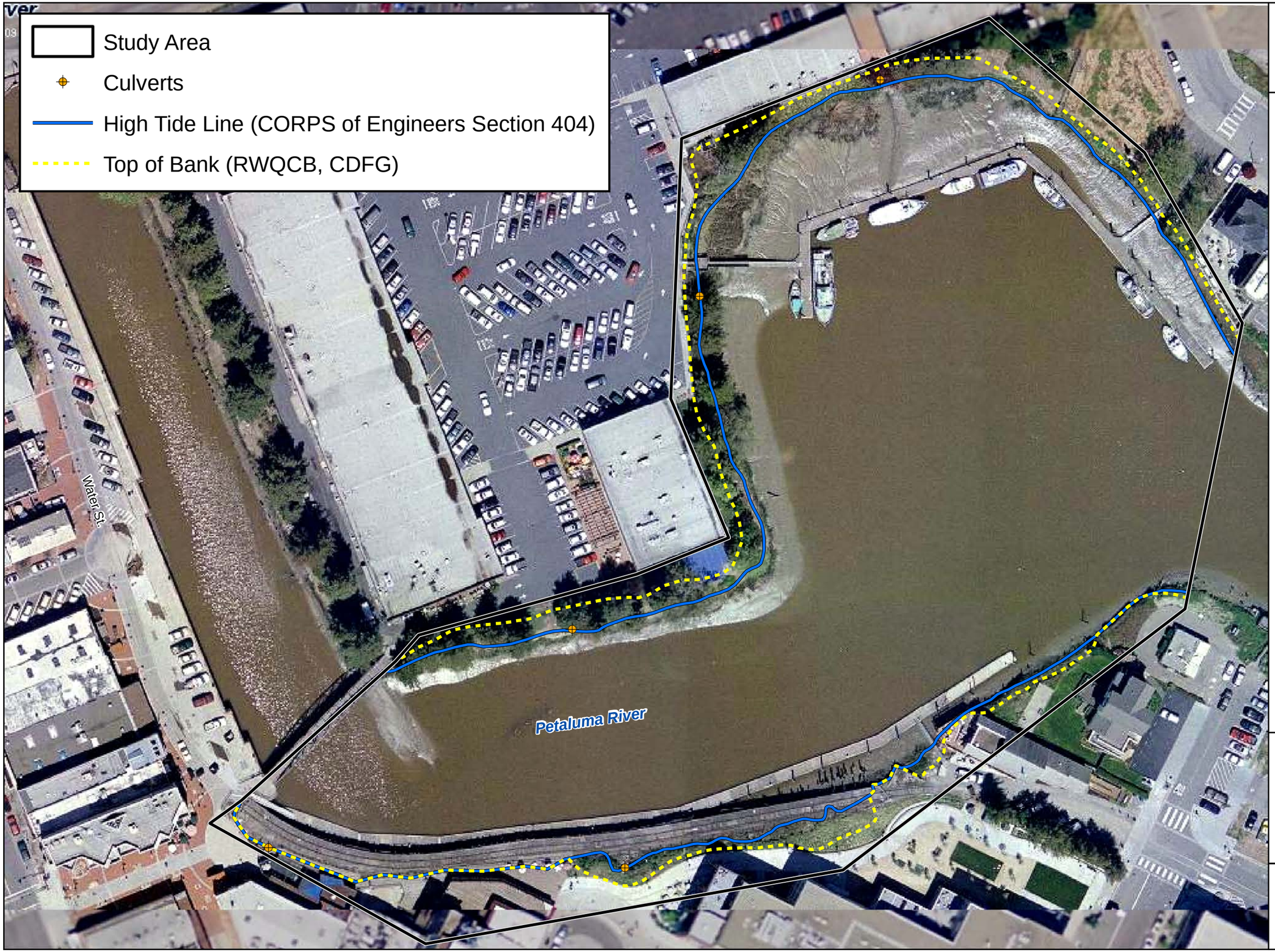

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Petaluma Trestle Rehabilitation Project

Sonoma County, California

Regulatory Agency Jurisdictional Delineation Map

N
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0 25 50 100
Feet

Map Date: August 2011
Map By: Michael Rochelle

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